

IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1-17 (Cancelled)

18. (Currently Amended) A network system, comprising:

a [[coaxial]] first cable configured to transmit coaxial data, wherein the [[coaxial]] first cable comprises first and second coaxial cables each having[[,]]:

a conductor configured to transmit coaxial data, and

a shield at [[-]] least partially surrounding the conductor and configured to transmit power;

a first converter in electrical communication with the [[coaxial]] first cable and configured to convert coaxial data to differential data; and

a switch in electrical communication with the first converter, the switch having a plurality of ports and being configured to receive and switch differential data,

wherein the [[coaxial]] first cable and the first converter are further configured to transmit the power.

19. (Original) The network system of claim 18, wherein the first converter further comprises,

a first transformer in electrical communication with the conductor and shield of the first coaxial cable and configured to convert differential data to coaxial data, and

a second transformer in electrical communication with the conductor and shield of the second coaxial cable and configured to convert coaxial data to differential data.

20. (Original) The network system of claim 19, wherein the first converter further comprises an amplifier in electrical communication with the first transformer and configured to amplify coaxial data.

21. (Original) The network system of claim 19, wherein the first converter further comprises,

a first blocking capacitor in electrical communication with the first transformer and the conductor of the first coaxial cable and configured to substantially restrict passage of power, and

a second blocking capacitor in electrical communication with the second transformer and the conductor of the second coaxial cable and configured to substantially restrict passage of power.

22-48 (Cancelled)

49. (New) A system comprising:

a first cable;

a second cable;

a converter in electrical communication with the first cable and the second cable, wherein the converter is configured to:

convert first differential data received from the first cable to first coaxial data and transmit the first coaxial data onto the second cable; and

receive power and supply the power to one or more other devices through the second cable;

wherein the second cable comprises first and second coaxial cables, wherein each of the first and second coaxial cables comprises a conductor and a shield at least partially surrounding the conductor;

wherein the converter is configured to supply the power to the one or more devices through the shield of the first coaxial cable and the shield of the second coaxial cable.

50. (New) The system of claim 49, wherein the converter is further configured to:
- convert second coaxial data from the second cable to second differential data, and
- transmit the second differential data onto the first cable.
51. (New) The system of claim 50, wherein the converter is configured to transmit the first coaxial data onto the conductor of the first coaxial cable;
- wherein the converter is configured to transmit the second coaxial data onto the conductor of the second coaxial cable.
52. (New) The system of claim 50, wherein the first coaxial cable is a 50 ohm coaxial cable.
53. (New) The system of claim 50, wherein the converter comprises:
- a first transformer in electrical communication with the first cable and configured to perform said conversion of the first differential data to the first coaxial data;
- and
- a second transformer in electrical communication with the first cable and configured to perform said conversion of the second coaxial data to the second differential data.
54. (New) The system of claim 53, wherein the converter further comprises:
- a first capacitor in electrical communication with a first terminal of the first transformer and with the conductor of the first coaxial cable, wherein the first capacitor is configured to pass the first coaxial data and to block passage of the power;

a second capacitor in electrical communication with a first terminal of the second transformer and with the conductor of the second coaxial cable, wherein the second capacitor is configured to pass the second coaxial data and to block passage of the power.

55. (New) The system of claim 54, wherein the converter further comprises an amplifier in electrical communication with the first capacitor and the conductor of the first coaxial cable and configured to amplify the first coaxial data prior to transmission of said first coaxial data onto the conductor of the first coaxial cable.

56. (New) The system of claim 54, wherein a second terminal of the first transformer is in electrical communication with the shield of the first coaxial cable, wherein a second terminal of the second transformer is in electrical communication with the shield of the second coaxial cable.

57. (New) The system of claim 49, where the first cable comprises Cat-5 cable.

58. (New) The system of claim 49, wherein the second cable further comprises an outer shield at least partially surrounding the first and second coaxial cables.

59. (New) The system of claim 49, wherein the converter further comprises auxiliary power lines and the second cable further comprises auxiliary power lines in electrical communication with the auxiliary power lines of the converter.

60. (New) A system comprising:

a first cable configured to transmit first coaxial data;

a first converter in electrical communication with the first cable and configured to convert the first coaxial data to first differential data; and

a switch in electrical communication with the first converter and having a plurality of ports, wherein the switch is configured to receive and route packets of the first differential data to any of said ports.

61. (New) The system of claim 60, further comprising:

a second converter in electrical communication with one of said ports of the switch, wherein the second converter is configured to:

convert the first differential data to second coaxial data, and

transmit the second coaxial data onto a second cable.

62. (New) The system of claim 60, wherein the first converter is configured to receive power from the first cable and to supply the power to one or more devices including the switch.

63. (New) The system of claim 62 further comprising:

a power manager configured to receive the power from the first converter and to perform said supplying of the power to the one or more devices;

a second converter in electrical communication with a first port of the switch and configured to convert a first portion of the first differential data to second coaxial data;

a third converter in electrical communication with a second port of the switch and configured to convert a second portion of the first differential data to third coaxial data;

wherein the power manager is configured to provide the power to the switch, the second converter and the third converter.

64. (New) The system of claim 63, wherein the power manager includes a power switch, wherein the power manager provides the power through the switch to at least one of the second converter and the third converter.

65. (New) The system of claim 64, wherein the power switch is digitally controlled.

66. (New) The system of claim 60, wherein the first converter is in electrical communication with the switch through a third cable, wherein the third cable is a Cat-5 cable.

67. (New) The system of claim 60, further comprising a plurality of fourth cables in electrical communication with respective ports of the switch, wherein the fourth cables are Cat-5 cables.

68. (New) A converter comprising:

a first port configured to receive first differential data from a first cable;

a first transformer in electrical communication with the first port and configured to convert the first differential data to first coaxial data;

a second port in electrical communication with the first transformer and configured to transmit the first coaxial data onto a second cable;

a third port configured to receive second coaxial data from a third cable;

a second transformer in electrical communication with the third port and configured to convert the second coaxial data to second differential data; and

a fourth port in electrical communication with the second transformer and configured to transmit the second differential data onto the first cable;

first and second conductive lines in electrical communication with a first terminal of the second port and a first terminal of the third port respectively;

wherein the second and third cables are coaxial cables, each having a conductor and a shield at least partially surrounding the conductor;

wherein the first terminal of the second port and the first terminal of the third port are configured for coupling to the shield of the second cable and the shield of the third cable respectively;

wherein the first and second conductive lines are configured to transmit power, provided by the shield of the second cable and the shield of the third cable, to one or more power output ports.

69. (New) The converter of claim 68 further comprising:

a first capacitor in electrical communication with a first terminal of the first transformer and a second terminal of the second port, wherein the first capacitor is configured to pass the first coaxial data and block passage of the power; and

a second capacitor in electrical communication with a first terminal of the second transformer and a second terminal of the third port, wherein the second capacitor is configured to pass the second coaxial data and block passage of the power.

70. (New) The converter of claim 68 further comprising:

auxiliary power lines configured to transmit power and configured to engage power lines exterior to the converter.

71. (New) The converter of claim 68 further comprising:

an amplifier in electrical communication with the first transformer and the second port and configured to amplify the first coaxial data prior to transmission onto the second cable.

72. (New) A method for transmitting data and power across a network, the method comprising:

transmitting first coaxial data and power through a first cable;

receiving the first coaxial data and the power from the first cable;

converting the first coaxial data to first differential data;

transmitting the first differential data onto a second cable;

providing the received power to one or more devices;

wherein the first cable includes a first coaxial cable and a second coaxial cable, each having a conductor and a shield at least partially surrounding the conductor, wherein said receiving the power from the first cable comprises receiving the power from the shield of the first coaxial cable and the shield of the second coaxial cable.

73. (New) The method of claim 72, wherein said receiving the first coaxial data from the first cable includes receiving the first coaxial data from the conductor of the first coaxial cable.

74. (New) The method of claim 72, wherein the second cable is a Cat-5 cable.

75. (New) The method of claim 72 further comprising:
receiving second differential data from the second cable;
converting the second differential data to second coaxial data; and
transmitting the second coaxial data onto the conductor the first coaxial cable.

76. (New) The method of claim 75, wherein said transmitting the second coaxial data onto the first cable includes transmitting the second coaxial data onto an inner conductor of the second coaxial cable.

77. (New) The method of claim 75 further comprising amplifying the second coaxial data prior to transmission onto the first cable.

78. (New) The method of claim 72 further comprising routing packets of the first differential data to destinations based on addresses of the packets.

79. (New) The method of claim 78, wherein said one or more devices includes a switch configured to perform said routing of packets.

80. (New) The method of claim 72 further comprising:
routing a first portion of the first differential data to a first converter;

the first converter converting the first portion of the first differential data into second coaxial data;

the first converter transmitting the second coaxial data onto a third cable.

81. (New) The method of claim 80 further comprising:

routing a second portion of the first differential data to a second converter;

the second converter converting the second portion of the first differential data into third coaxial data;

the second converter transmitting the third coaxial data onto a fourth cable.

82. (New) The method of claim 80, wherein the one or more devices include the first converter.

83. (New) The method of claim 72, wherein the first cable also includes auxiliary power lines, wherein said receiving the power from the first cable comprises receiving the power from the auxiliary power lines of the first cable.

84. (New) A distribution device for use in transmitting data and power, the method comprising:

a switch in electrical communication with an uplink connector and having a plurality of ports, wherein the switch is configured to receive data from the uplink connector and route packets of the data to any of said ports;

a first cable in electrical communication with a first of said ports and configured to receive first differential data from said first port and transmit the first differential data;

a first converter in electrical communication with the first cable and configured to:

receive the first differential data from the first cable;

convert the first differential data to first coaxial data;
transmit the first coaxial data to a second cable; and
receive power from a power bus and transmit the power onto the second cable.

85. (New) The distribution device of claim 84, wherein the first converter is further configured to:

receive second coaxial data from the second cable;
convert the second coaxial data to second differential data; and
transmit the second coaxial data to the switch through the first cable.

86. (New) The distribution device of claim 84 further comprising:

a power control in electrical communication with the first converter through said power bus and with a second of said ports and configured to provide said power to the first converter through said power bus.

87. (New) The distribution device of claim 86 further comprising:

a power supply in electrical communication with the power control and configured to provide power supply power to the power control, wherein the power supply power is DC power.

88. (New) The distribution device of claim 87 further comprising:

a storage battery in electrical communication with the power supply and configured to provide battery power to the power supply.

89. (New) The distribution device of claim 87 further comprising:

a power transformer in electrical communication with an AC power source and with the power supply and configured to provide AC power to the power supply.

90. (New) The distribution device of claim 84, wherein the first converter comprises a transformer configured to perform said conversion of the first differential data to the first coaxial data.

91. (New) The distribution device of claim 90, wherein the first converter comprises a capacitor in electrical communication with a first terminal of the transformer and configured to pass the first coaxial data and to block passage of the power.

92. (New) The distribution device of claim 90, wherein the first converter comprises an amplifier in electrical communication with a first terminal of the transformer and configured to amplify the coaxial data prior to transmission onto the second cable.

93. (New) The distribution device of claim 84 further comprising:
a third cable in electrical communication with a second of said ports and configured to receive third differential data from said second port and to transmit the third differential data;
a second converter in electrical communication with the third cable and configured to:
 receive the third differential data from the third cable;
 convert the third differential data to third coaxial data;
 transmit the third coaxial data to a fourth cable; and
 receive the power from the power bus and transmit the power onto the fourth cable.

94. (New) The distribution device of claim 84, wherein the first cable comprises a Cat-5 cable.